

What is claimed is:

1. A process for making a food additive comprising combining an edible solubilizing agent, an effective amount of a suitable antioxidant, an effective amount of a suitable dispersant and a sterol or stanol ester made by reacting a sterol or a stanol and a carboxylic acid in the presence of an effective amount of a catalyst selected from the group consisting of calcium oxide, calcium hydroxide, a calcium salt of a carboxylic acid, magnesium hydroxide and combinations thereof.
2. The process of claim 1 wherein the sterol is β -sitosterol.
3. The process of claim 1 wherein the sterol is β -sitostanol.
4. The process of claim 1 wherein the catalyst is calcium hydroxide, calcium oxide or a calcium salt of a carboxylic acid.
5. The process of claim 1 wherein the carboxylic acid is a carboxylic acid having from about 2 to 22 carbon atoms.
6. A process which comprises reacting β -sitostanol with a carboxylic acid in the presence of an effective amount of calcium oxide.
7. The process of claim 6 wherein the carboxylic acid is a carboxylic acid having from about 2 to 22 carbon atoms.
8. The process of claim 1 wherein the carboxylic acid is a mixture of long chain carboxylic acids derived from sunflower oil, palm kernel oil, coconut oil, rape seed oil, tallow, corn oil, canola oil, linseed oil, palm oil, olive oil, sesame oil, safflower oil.
9. A process which comprises reacting β -sitosterol with a carboxylic acid in the presence of an effective amount of calcium oxide.

10. The process of claim 1 wherein the antioxidant is vitamin C, vitamin E, β -carotene, an extract of the bark of the maritime pine, *Pinus maritima*, or combinations thereof.

5 11. A food additive composition comprising an edible solubilizing agent, an effective amount of a suitable antioxidant and an effective amount of a suitable dispersant and a sterol or stanol ester made by reacting a sterol or a stanol and a carboxylic acid in the presence of an effective amount of a catalyst selected from the group consisting of calcium oxide, calcium hydroxide, a calcium salt of a carboxylic acid, magnesium hydroxide and
10 combinations thereof.

12. The composition of claim 11 wherein the sterol is β -sitosterol.

13. The composition of claim 11 wherein the stanol is β -sitostanol.

14. The composition of claim 11 wherein the catalyst is calcium hydroxide, calcium oxide or a calcium salt of a carboxylic acid.

15 15. The composition of claim 11 wherein the carboxylic acid is a carboxylic acid having from about 2 to 22 carbon atoms.

16. The composition of claim 11 wherein the antioxidant is vitamin C, vitamin E, β -carotene, an extract of the bark of the maritime pine, *Pinus maritima*, or combinations thereof.

20 17. The composition of claim 11 wherein the carboxylic acid is a mixture of long chain carboxylic acids derived from sunflower oil, palm kernel oil, coconut oil, rape seed oil, tallow, corn oil, canola oil, linseed oil, palm oil, olive oil, sesame oil, safflower oil.

18. The composition of claim 17 wherein the mixture of long chain

carboxylic acids derived from sunflower oil.

19. A process which comprises reacting β -sitosterol with a carboxylic acid in the presence of an effective amount of calcium oxide.

5 20. The composition of claim 11 wherein the antioxidant is vitamin C, vitamin E, β -carotene, an extract of the bark of the maritime pine, *Pinus maritima*, or combinations thereof.

10 21. A food additive made by the process comprising combining an edible solubilizing agent, an effective amount of a suitable antioxidant, an effective amount of a suitable dispersant and a sterol or stanol ester made by reacting a sterol or a stanol and a carboxylic acid in the presence of an effective amount of a catalyst selected from the group consisting of calcium oxide, calcium hydroxide, a calcium salt of a carboxylic acid, magnesium hydroxide and combinations thereof.

22. The food additive of claim 21 wherein the sterol is β -sitosterol.

15 23. The food additive of claim 21 wherein the sterol is β -sitostanol.

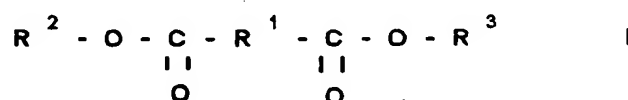
24. The food additive of claim 21 wherein the catalyst is calcium hydroxide, calcium oxide or a calcium salt of a carboxylic acid.

25. The food additive of claim 21 wherein the carboxylic acid is a carboxylic acid having from about 2 to 22 carbon atoms.

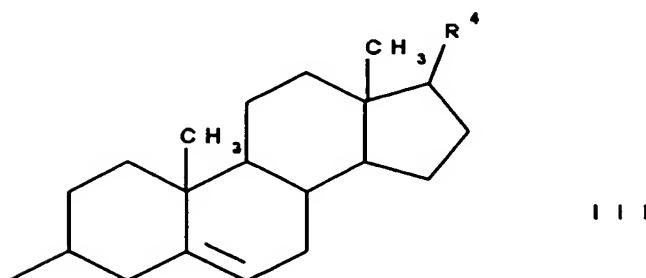
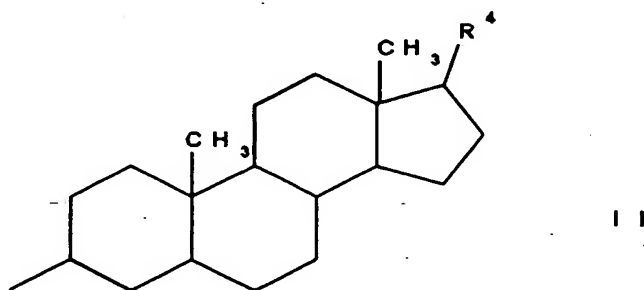
20 26. The food additive of claim 21 wherein the carboxylic acid is a mixture of long chain carboxylic acids derived from sunflower oil, palm kernel oil, coconut oil, rape seed oil, tallow, corn oil, canola oil, linseed oil, palm oil, olive oil, sesame oil, safflower oil.

27. The food additive of claim 21 wherein the antioxidant is vitamin C, vitamin E, β -carotene, an extract of the bark of the maritime pine, *Pinus maritima*, or combinations thereof.

28. A composition comprising an edible solubilizing agent, an effective amount of a suitable antioxidant, an effective amount of a suitable dispersant and a compound of the formula I



wherein R^1 is an aliphatic or aromatic moiety having from one to about 36 carbon atoms and each of R^2 and R^3 is independently hydrogen with the proviso that only one of R^2 or R^3 is hydrogen, or a radical of the formula II or formula III

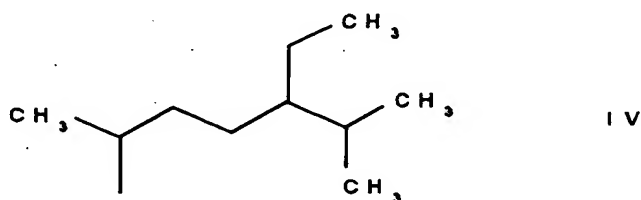


wherein R^4 is an alkyl, substituted alkyl, alkenyl or substituted alkenyl group having from one to about 10 carbon atoms.

29. The composition of claim 28 wherein R^1 is an alkylene radical having from 2 to 18 carbon atoms; each of R^2 and R^3 is a radical of the formula II wherein R^4 is an alkyl radical having from 2 to 10 carbon atoms.

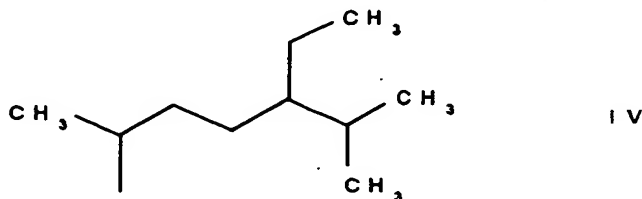
30. The composition of claim 28 wherein R^1 is an alkylene radical having 7 carbon atoms and wherein each of R^2 and R^3 is a radical of the formula II wherein R^4 is a branched alkyl group having 10 carbon atoms.

31. The composition of claim 30 wherein said branched alkyl group has the formula IV



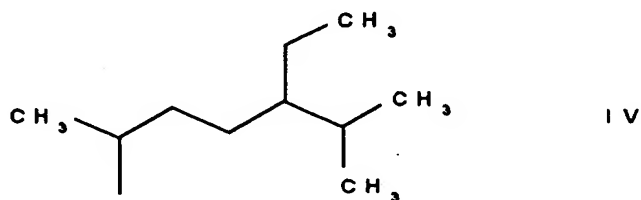
32. The composition of claim 28 wherein R^1 is an alkylene radical having 8 carbon atoms and wherein each of R^2 and R^3 is a radical of the formula II wherein R^4 is a branched alkyl group having 10 carbon atoms.

33. The composition of claim 32 wherein said branched alkyl group has the formula IV



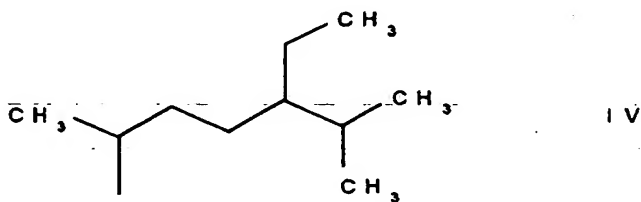
34. The composition of claim 28 wherein R^1 is an alkylene radical having 10 carbon atoms and wherein each of R^2 and R^3 is a radical of the formula II wherein R^4 is a branched alkyl group having 10 carbon atoms.

35. The composition of claim 34 wherein said branched alkyl group has the formula IV

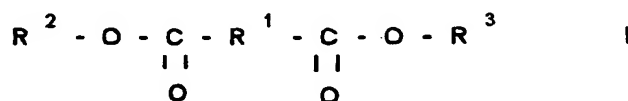


36. The composition of claim 28 wherein R^1 is an alkylene radical having 11 carbon atoms and wherein each of R^2 and R^3 is a radical of the formula II wherein R^4 is a branched alkyl group having 10 carbon atoms.

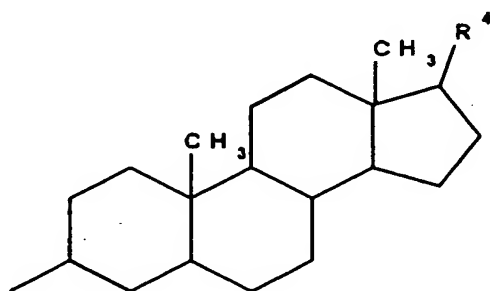
37. The composition of claim 36 wherein said branched alkyl group has the formula IV



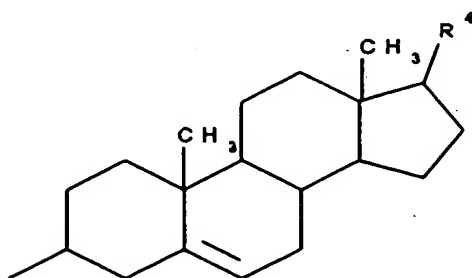
38. A composition made by the process which comprises combining an edible solubilizing agent, an effective amount of a suitable antioxidant, an effective amount of a suitable dispersant and a compound of the formula I



wherein R^1 is an aliphatic or aromatic moiety having from one to about 36 carbon atoms and each of R^2 and R^3 is independently hydrogen with the proviso that only one of R^2 or R^3 is hydrogen, or a radical of the formula II or formula III



II



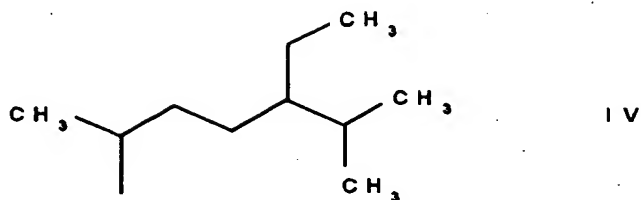
III

- 5 wherein R^4 is an alkyl, substituted alkyl, alkenyl or substituted alkenyl group having from one to about 10 carbon atoms.

39. The composition of claim 38 wherein R^1 is an alkylene radical having from 2 to 18 carbon atoms; each of R^2 and R^3 is a radical of the formula II wherein R^4 is an alkyl radical having from 2 to 10 carbon atoms.

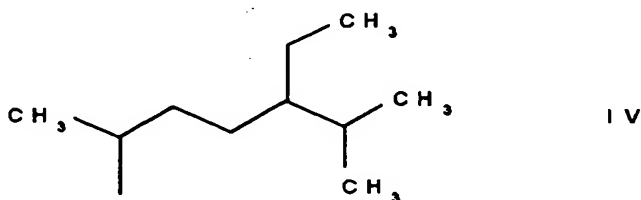
- 10 40. The composition of claim 38 wherein R^1 is an alkylene radical having 7 carbon atoms and wherein each of R^2 and R^3 is a radical of the formula II wherein R^4 is a branched alkyl group having 10 carbon atoms.

41. The composition of claim 40 wherein said branched alkyl group has the formula IV



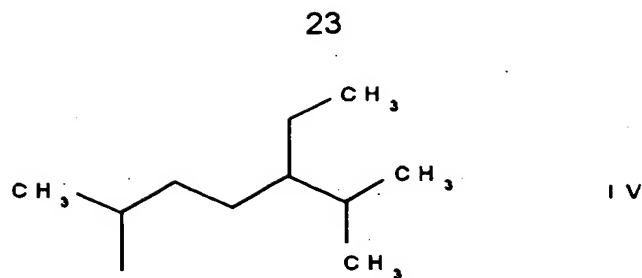
42. The composition of claim 38 wherein R¹ is an alkylene radical having 8 carbon atoms and wherein each of R² and R³ is a radical of the formula II wherein R⁴ is a branched alkyl group having 10 carbon atoms.

43. The composition of claim 42 wherein said branched alkyl group has the formula IV



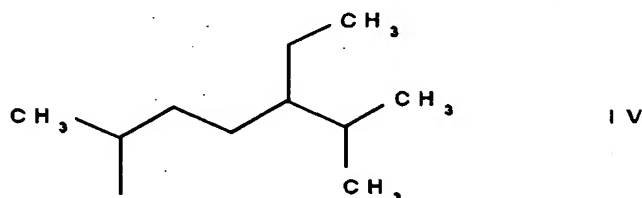
44. The composition of claim 38 wherein R¹ is an alkylene radical having 10 carbon atoms and wherein each of R² and R³ is a radical of the formula II wherein R⁴ is a branched alkyl group having 10 carbon atoms.

45. The composition of claim 44 wherein said branched alkyl group has the formula IV



46. The composition of claim 38 wherein R^1 is an alkylene radical having 11 carbon atoms and wherein each of R^2 and R^3 is a radical of the formula II wherein R^4 is a branched alkyl group having 10 carbon atoms.

47. The composition of claim 46 wherein said branched alkyl group has the formula IV



48. A method of reducing the absorption of cholesterol into the bloodstream comprising orally introducing into the body an effective amount of a substance containing a β -sitostanol ester wherein the ester is made by reacting β -sitostanol and a carboxylic acid in the presence of an effective amount of a catalyst selected from the group consisting of calcium oxide, calcium hydroxide, a calcium salt of a carboxylic acid, magnesium hydroxide and combinations thereof.

49. The method of claim 48 wherein the substance containing a β -sitostanol ester is comprised of an additive comprised of from about 70% to about 80% sunflower oil, rape seed oil or a combination thereof; from about 1% to about 2% vitamin E, an extract of the bark of the maritime pine, *Pinus*

maritima or a combination thereof; and from about 10% to about 25% of a β -sitostanol fatty acid ester prepared by the method according to the invention.

50. The method of claim 48 wherein an effective amount of the substance is from about 0.2 to about 2.0 grams per day.

5 51. The process of claim 48 wherein the catalyst is calcium hydroxide, calcium oxide or a calcium salt of a carboxylic acid.

52. The process of claim 48 wherein the carboxylic acid is a carboxylic acid having from about 2 to 22 carbon atoms.

10 53. A process which comprises reacting a sterol, a stanol, or a combination thereof with a carboxylic acid in the presence of an effective amount of a catalyst selected from the group consisting of calcium oxide, calcium hydroxide, a calcium salt of a carboxylic acid, magnesium hydroxide and combinations thereof.

54. The process of claim 53 wherein said sterol is β -sitosterol.

15 55. The process of claim 53 wherein said stanol is β -sitostanol.

56. The process of claim 53 wherein said catalyst is calcium hydroxide, calcium oxide or a calcium salt of a carboxylic acid.

57. The process of claim 53 wherein said carboxylic acid is a carboxylic acid having from about 2 to 22 carbon atoms.

20 58. A process which comprises reacting β -sitostanol with a carboxylic acid in the presence of an effective amount of calcium oxide.

59. The process of claim 58 wherein said carboxylic acid is a carboxylic

acid having from about 2 to 22 carbon atoms.

60. The process of claim 59 wherein said carboxylic acid is a mixture of long chain carboxylic acids derived from sunflower oil, palm kernel oil, coconut oil, rape seed oil, tallow, corn oil, canola oil, linseed oil, palm oil, olive oil, sesame oil, safflower oil.

61. A process which comprises the steps of: (1) forming a reaction mixture comprised of a sterol, a stanol, or a combination thereof with a carboxylic acid in the presence of an effective amount of a catalyst selected from the group consisting of calcium hydroxide, magnesium hydroxide and a combination in a reaction zone; (2) passing at least a portion of said reaction mixture through an evaporation zone to remove the water of reaction from said reaction mixture.

62. The process of claim 61 further comprising the step of returning the mixture from step (2) to said reaction zone.

63. The process of claim 61 wherein said catalyst is calcium oxide.

64. A process which comprises reacting a sterol, a stanol, or a combination thereof with an carboxylic acid ester in the presence of an effective amount of a catalyst selected from the group consisting of calcium oxide, calcium hydroxide, a calcium salt of a carboxylic acid, magnesium hydroxide and combinations thereof.

65. The process of claim 64 wherein said sterol is β -sitosterol.

66. The process of claim 64 wherein said stanol is β -sitostanol.

67. The process of claim 64 wherein said catalyst is calcium hydroxide, calcium oxide or a calcium salt of a carboxylic acid.

68. The process of claim 64 wherein said carboxylic acid is a carboxylic acid having from about 2 to 22 carbon atoms.

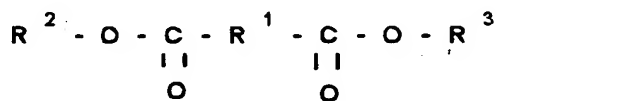
69. The process of claim 64 wherein said ester is a methyl ester of a C₆₋₂₂ fatty acid or a triglyceride.

5 70. A process which comprises reacting β -sitostanol with a carboxylic acid ester in the presence of an effective amount of calcium oxide.

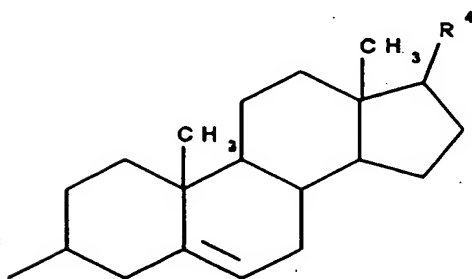
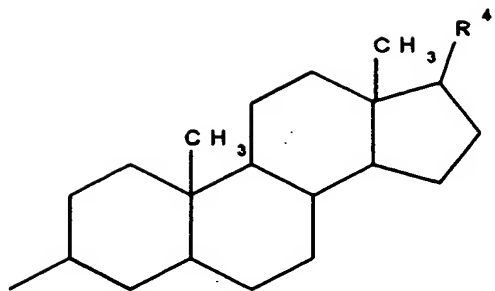
71. A process which comprises the steps of: (1) forming a reaction mixture comprised of a sterol, a stanol, or a combination thereof with a carboxylic acid ester in the presence of an effective amount of a catalyst selected from the group consisting of calcium hydroxide, magnesium hydroxide and a
10 combination in a reaction zone; (2) passing at least a portion of said reaction mixture through an evaporation zone to remove the water of reaction from said reaction mixture.

72. The process of claim 71 further comprising the step of returning the
15 mixture from step (2) to said reaction zone.

73. A compound of the formula I



wherein R¹ is an aliphatic or aromatic moiety having from one to about 36 carbon atoms and each of R² and R³ is independently hydrogen with the proviso that only one of R² or R³ is hydrogen, or a radical of the formula II or
20 formula III



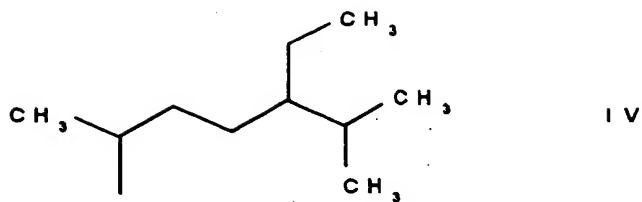
wherein R^4 is an alkyl, substituted alkyl, alkenyl or substituted alkenyl group having from one to about 10 carbon atoms.

74. The compound of claim 73 wherein R^1 is an alkylene radical having from 2 to 18 carbon atoms; each of R^2 and R^3 is a radical of the formula II wherein R^4 is an alkyl radical having from 2 to 10 carbon atoms.

75. The compound of claim 73 wherein R^1 is an alkylene radical having 7 carbon atoms and wherein each of R^2 and R^3 is a radical of the formula II wherein R^4 is a branched alkyl group having 10 carbon atoms.

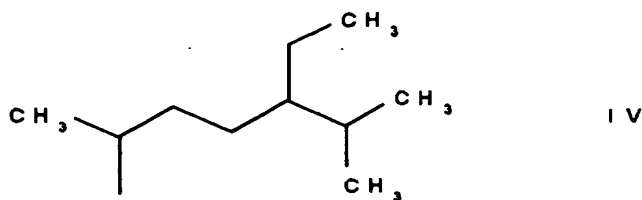
76. The compound of claim 73 wherein said branched alkyl group has the formula IV

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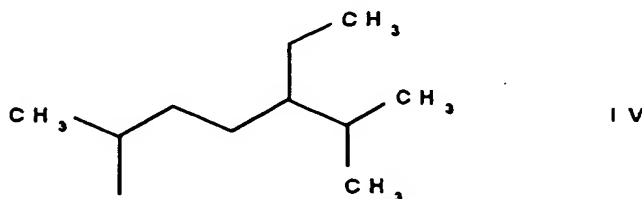
77. The compound of claim 73 wherein R¹ is an alkylene radical having 8 carbon atoms and wherein each of R² and R³ is a radical of the formula II wherein R⁴ is a branched alkyl group having 10 carbon atoms.

78. The compound of claim 77 wherein said branched alkyl group has the formula IV



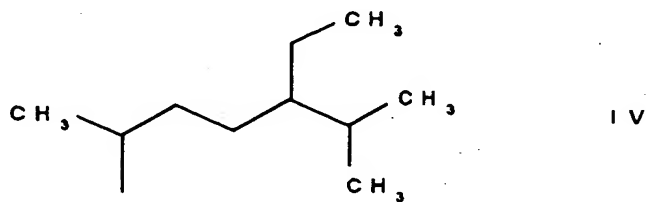
79. The compound of claim 77 wherein R¹ is an alkylene radical having 10 carbon atoms and wherein each of R² and R³ is a radical of the formula II wherein R⁴ is a branched alkyl group having 10 carbon atoms.

80. The compound of claim 77 wherein said branched alkyl group has the formula IV



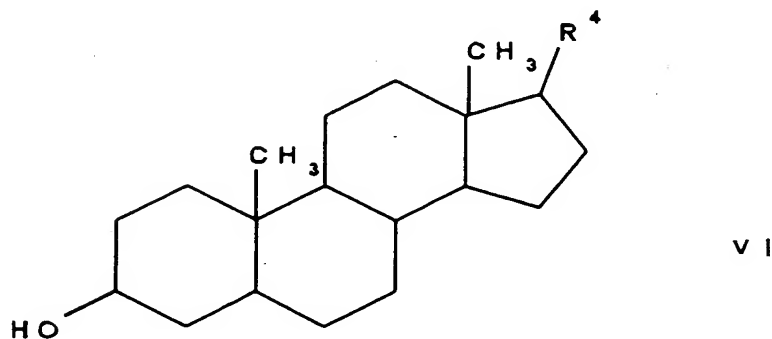
81. The compound of claim 73 wherein R^1 is an alkylene radical having 11 carbon atoms and wherein each of R^2 and R^3 is a radical of the formula II wherein R^4 is a branched alkyl group having 10 carbon atoms.

82. The compound of claim 81 wherein said branched alkyl group has the formula IV



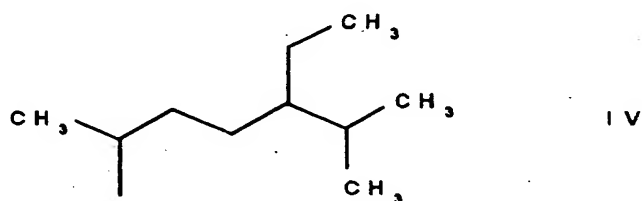
83. A compound which is the product of the process which comprises reacting a sterol, a stanol, or a combination thereof with a dicarboxylic acid in the presence of an effective amount of a catalyst selected from the group consisting of calcium oxide, calcium hydroxide, a calcium salt of a carboxylic acid, magnesium hydroxide and combinations thereof.

84. The compound of claim 83 wherein said stanol is a compound of the formula VI

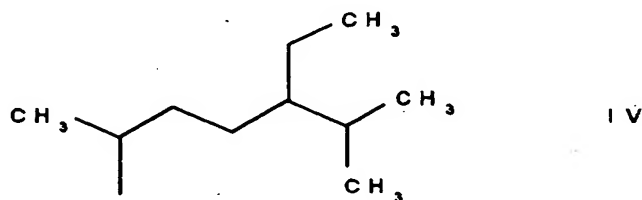


wherein R^4 is an alkyl, substituted alkyl, alkenyl or substituted alkenyl group having from one to about 10 carbon atoms.

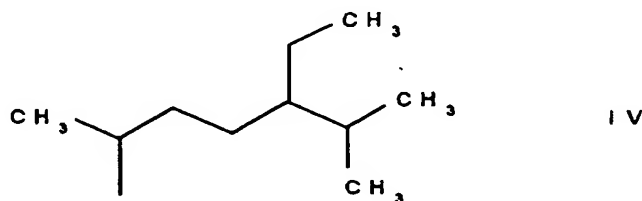
85. The compound of claim 84 wherein said dicarboxylic acid is azelaic acid and wherein said branched alkyl group of the formula IV



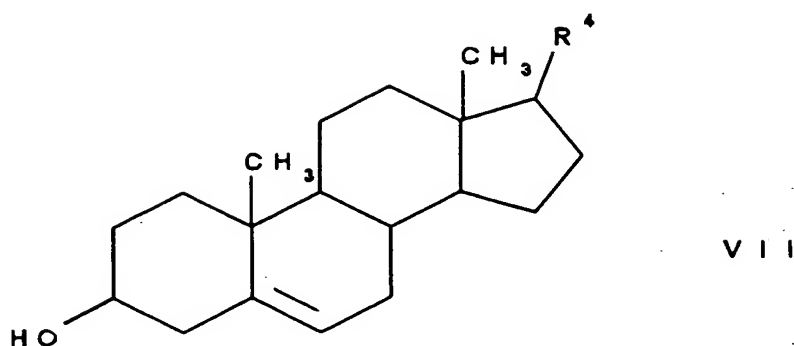
5 86. The compound of claim 84 wherein said dicarboxylic acid is dodecanedioic acid and wherein said branched alkyl group of the formula IV



87. The compound of claim 84 wherein said dicarboxylic acid is brassylic acid and wherein said branched alkyl group of the formula IV

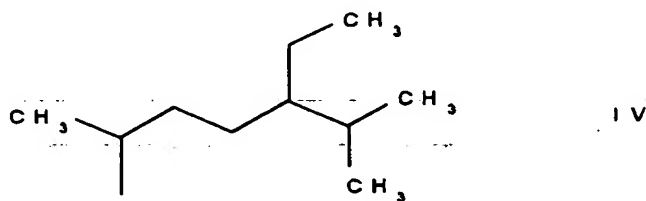


88. The compound of claim 83 wherein said sterol is a compound of the formula VII

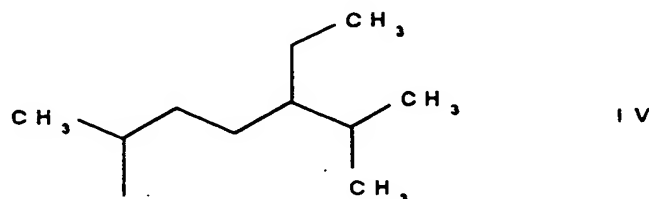


wherein R^4 is an alkyl, substituted alkyl, alkenyl or substituted alkenyl group having from one to about 10 carbon atoms.

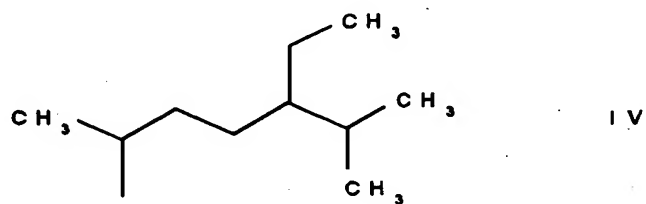
- 5 89. The compound of claim 88 wherein said dicarboxylic acid is azelaic acid and wherein said branched alkyl group of the formula IV



90. The compound of claim 88 wherein said dicarboxylic acid is dodecanedioic acid and wherein said branched alkyl group of the formula IV



91. The compound of claim 88 wherein said dicarboxylic acid is brassylic acid and wherein said branched alkyl group of the formula IV



92. The compound of claim 83 wherein said catalyst is calcium oxide.